

What is Claimed Is:

1. A recording method for a photo addressable recording medium including an optical switching element and a display element, a resistance component of the optical switching element being controlled at least depending on a direction of an applied voltage, the method comprising:

controlling a display of the display element by controlling a ratio of the resistance component of the optical switching element at least depending on the applied voltage direction to control an electrical charge amount of the display element.

2. The recording method according to claim 1, wherein the ratio of the resistance component of the optical switching element at least depending on the direction of the applied voltage is controlled by an amount of light.

3. A recording method for a photo addressable recording medium including an optical switching element and a display element, a resistance component of the optical switching element being controlled at least depending on a direction of an applied voltage, the method comprising:

applying a voltage to the display element during both the case where the optical switching element is irradiated with light and the case where the optical switching element is not irradiated with light so that the voltage applied to the display element is greater than a threshold voltage of the display element to turn on a display thereof, wherein, in the case where optical switching element is irradiated with light, after controlling an electrical charge amount of the display element by means of controlling a ratio of the resistance component depending at least on the direction of the applied voltage and turning off the voltage applied to the recording medium, the display is turned off by applying the voltage, due to the electrical charge, effectively smaller than the threshold voltage.

4. A recording method for a photo addressable recording medium including an

optical switching element and a display element, a resistance component of the optical switching element being controlled at least depending on a direction of an applied voltage, the method comprising:

when the optical switching element is not irradiated with light, applying a voltage to the display element so that the applied voltage does not exceed a threshold voltage of the display element; and

when the optical switching element is irradiated with light, controlling a ratio of the resistance component depending at least on the direction of the applied voltage to control an electrical charge amount of the display element, thus applying a voltage to the display element to turn on a display thereon, the applied voltage exceeding the threshold voltage due to a partial voltage increased by the decrease of the resistance component of the optical switching element and an effectively generated voltage caused by the electrical charge.

5. The recording method according to claim 1, wherein a phase change of the display element is controlled by a threshold voltage thereof or by steepness of a voltage drop after a driving pulse is turned off.

6. The recording method according to claim 1, wherein the display element has two or more threshold voltages.

7. The recording method according to claim 1, wherein a phase change of the display element is controlled at least by a threshold voltage thereof or by steepness of a voltage drop after a driving pulse is turned off, or a display element with plural display elements having different time constants laminated therein.

8. The recording method according to claim 1, wherein a cholesteric liquid crystal is used in the display element.

9. The recording method according to claim 1, wherein the optical switching element has a photoconductive layer made of an organic material.

10. The recording method according to claim 1, wherein the optical switching

element has a photoconductive layer formed by sequentially stacking a charge generating layer, a charge transport layer and a charge generating layer.

11. The recording method according to claim 1, wherein the applied voltage is a sine wave whose frequency is equal to or higher than 500Hz.

12. A photo addressable recording medium, which is used in the recording method according to claim 1, comprising:

an optical switching element, a resistance component of which is controlled at least according to a direction of an applied voltage; and
a display element.

13. The photo addressable recording medium according to claim 12, wherein the optical switching element has a photoconductive layer formed by sequentially stacking a charge generating layer, a charge transport layer and a charge generating layer.

14. A display device, which is used in the recording method according to claim 1, comprising:

a photo addressable recording medium having an optical switching element, a resistance component of which is controlled at least according to a direction of an applied voltage, and a display element;

a recording medium driving unit that drives the recording medium;

a photo addressing unit that performs recording to the recording medium; and
a control unit.

15. A recording device, which is used in the recording method according to claim 1, comprising:

a recording medium driving unit connected to a photo addressable recording medium having an optical switching element, a resistance component of which is controlled at least according to a direction of an applied voltage, and a display element;

a photo addressing unit that performs recording to the recording medium; and

a control unit.